

**SONY®**

EDITING CONTROL UNIT

**BVE-600**

MAINTENANCE MANUAL

Volume 1 1st Edition (Revised 4)

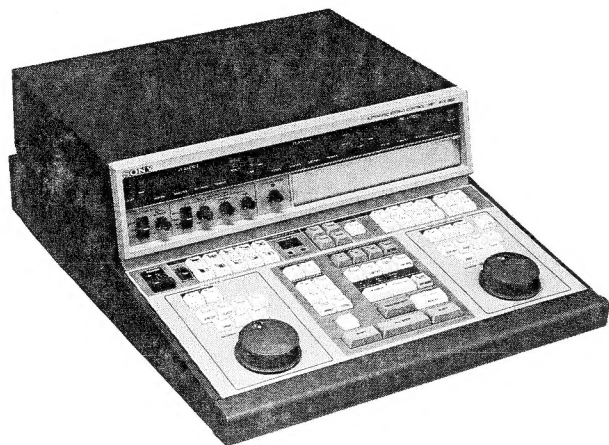
Serial No. 10001 and Higher (UC)

Serial No. 10001 and Higher (EK)

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## SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25 V so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

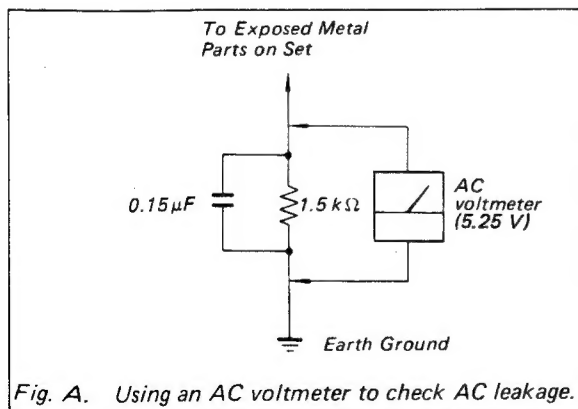


Fig. A. Using an AC voltmeter to check AC leakage.

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### 5. BLOCK DIAGRAMS

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## SECTION 1 INSTALLATION

### 1-1. OPERATIONAL ENVIRONMENT

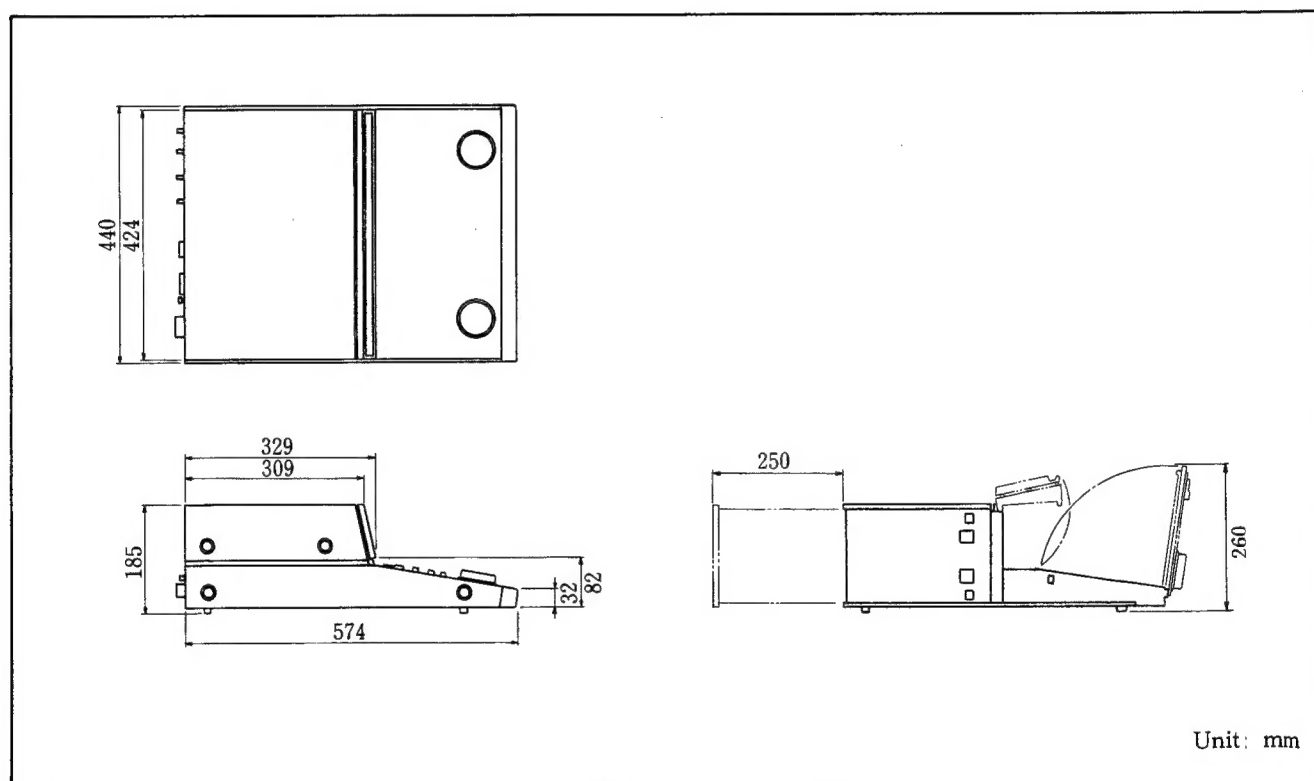
- To prevent the BVE-600 from overheating, ensure that there is a good air circulation around the unit. Be sure not to block the ventilation holes.
- The unit should be operated in a temperature range from 0°C to 45°C. Avoid installing the unit near heat sources.

### 1-3. OPERATING VOLTAGE

Using a voltage selector, the BVE-600 can be switched over by the voltage of 100 thru. 120V / 220 thru. 240V.

### 1-2. INSTALLATION SPACE

- The dimensions of the unit are shown in the figure below.

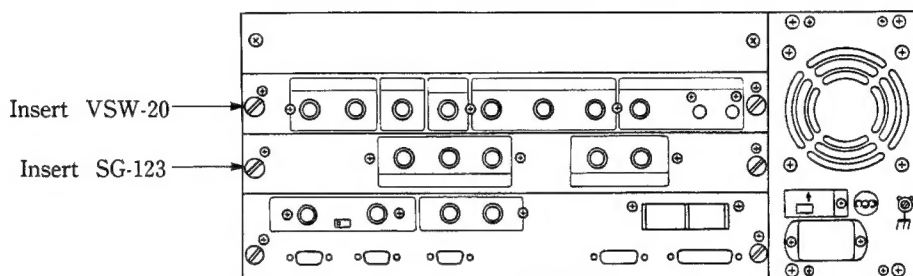


## 1-4. SYSTEM UP

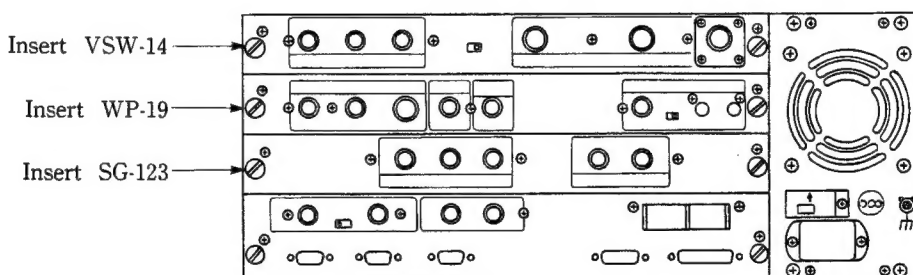
### 1-4.1. Installation of Optional Boards

Optional board BKE-611, BKE-621 (for UC model), BKE-612, and BKE-622 (for EK model) are available, according to your systematic necessities. Inserting positions are shown in the figure below.

Connection of BKE-611 (for UC) and BKE-612  
(for EK):



Connection of BKE-621 (for UC) and BKE-622  
(for EK):

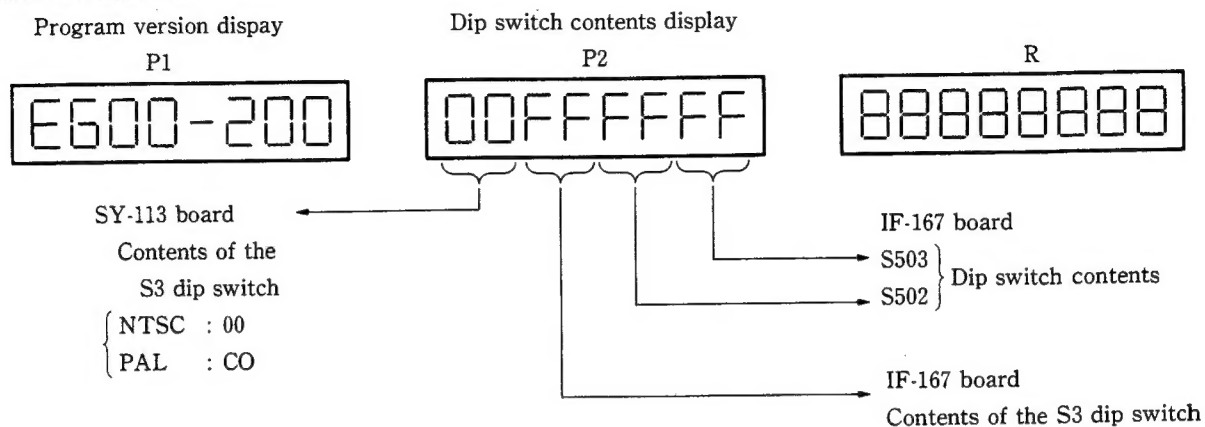


### 1-4.2. Alarm Tone Level Adjustment

Alarm tone level can be adjusted by RV1 on the SY-113 board.

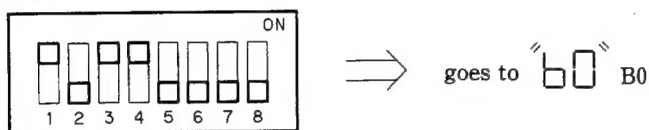
### 1-4-3. Dip Switch Contents Display (S/N 20001 AND HIGHER)

For the version after BVE-600 V2.00 model, the contents of dip switch is displayed on turning on the power and displaying the version of the software.



(Note) The contents of the dip switch is displayed by hexadecimal. The dip switch position of MSB of No.1 to LSB of No. 8 are prescribed that the side ON is to "1" and the side OFF is to "0".

exp



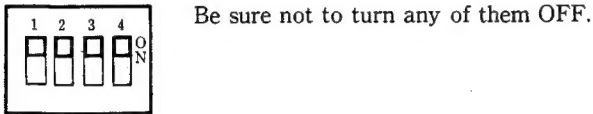
1-4.4. Setting Of The System Select Circuit

Along with the select switches and controls located on the control panel and connector panel, internal system select circuits are on the circuit boards.

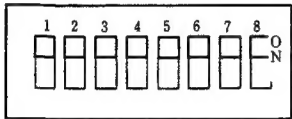
(1) IF-167 Board

(i) S1, S2:

When the unit is shipped, all of them are set to ON.



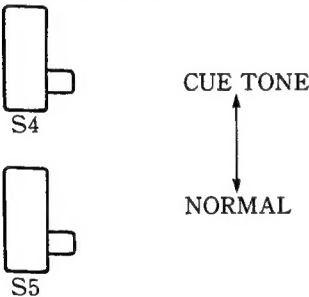
(ii) S3:



(iii) S4, S5 :

When the unit is shipped, they are set to the bottom.

Be sure not to turn them to the upper.



(2) SY-113 Board

(i) S1 RESET Switch : When this switch is pushed, CPU is reset.

(ii) S2 BACKUP ON/OFF Switch : This is ON/OFF switch for the memory battery backup function on the SY-113 board.

When the set is shipped, the BACKUP ON/OFF switch is set to the ON.

(iii) S3 SYSTEM SELECT Switch : When the set is shipped;

For UC ; Bit 1 to 8 are set to the OFF position.

For EK ; Bit 1 to 3 are set to the ON position.

Bit 4 to 8 are set to the OFF position.

Function :

- Bit 1, Bit 2

These bits select the video system.

Bit 1	Bit 2	Video System
OFF	OFF	NTSC
ON	OFF	---
OFF	ON	PAL-M
ON	ON	PAL/SECAM



- Bit 3

OFF CTL DISPLAY MODE 12H MODE

ON CTL DISPLAY MODE 24H MODE

- Bit 4, 5, 6, 7 and 8

Undefined.

Set these bits to OFF position.

(3) SW-231 Board

(i) S1 WIPE PATTERN BORDER LINE SWITCH :

SOFT : Border line is softened

(It is adjusted by the SOFT/BORDER control.)

OFF : Border line is sharpened.

BORDER : Border line is edged.

(The edge width is adjusted by the SOFT/BORDER control.

The color is adjusted by the CHROMA HUE control. The brightness is adjusted by the LUM control.)

When the unit is shipped, it is set to OFF.

(ii) S2 BACK GROUND SWITCH :

BKGD : Background is colored.

(The tone is adjusted by HUE control. The depth of color is adjusted by CHROMA control.

The brightness is adjusted by LUM control.)

BLACK : Background becomes black.

COLOR BAR : Background becomes color bars.

When the unit is shipped, it is set to BKGD.

(iii) S301, Player 1/S302, Player 2/S303, Recorder

TIME COUNTER DISPLAY SWITCH :

S301, S302 and S303 switch over the contents of the time counter display. They also switch over the reference signal of the address for editing.

CTL : CTL is counted. Tape position is displayed. (address reference : CTL)

TC : Time code is read. Tape position is displayed. (address reference : Time code)

U-BIT : Users bit is read, and is displayed.

(address reference : Time code)

(iv) S305 PRE POLL TIME SET SWITCH :

FOR NTSC : It can be set to 3sec., 5sec., or 7sec. (When the unit is shipped, it is set to 5sec.)

FOR PAL : It can be set to 3sec., 5sec., or 10sec. (When the unit is shipped, it is set to 5sec.)

(v) S306 SYNCHRONIZING SWITCH :

FOR NTSC : It can be set to 2 field/4 field. When the unit is shipped, it is set to 2 field.

FOR PAL : It can be set to 2 field/4 field/8 field. When the unit is shipped, it is set to 4 field.

(vi) S307 SPLIT EDITING SWITCH :

AUDIO : Video IN point is set to around the point of Audio IN.

VIDEO : Audio IN point is set to around the point of Video IN.

When the unit is shipped, it is set to AUDIO.

(vii) S308 MIXER CONTROL SWITCH :

REMOTE : MXP-29 is controlled.

LOCAL : MXP-29 is not used.

When the unit is shipped, it is set to REMOTE.

(viii) S309 CF-REF VTR SW : VTR locks by itself, according to the lock-range of each VTR Player.

(ix) S310 Player 1 VTR, CF PHASE SW : It compensates the phase of the color frame, player 1.

(x) S311 PLAYER 2 VTR, CF PHASE SWITCH : It compensates the phase of the color frame, player 2.

(xi) S312 RECORDER VTR CF LEARN SWITCH :

When the recorder has the CF LOCK function and the S312 is pushed, BVE-600 follows the information detected by the recorder VTR.

(xii) S313 STATUS DISPLAY SWITCH :

ON : STATUS is displayed on the monitor.

OFF : STATUS is not displayed on the monitor.

When the unit is shipped, it is set to ON.

(4) SW-232 Board

(i) S601 NORMAL/REVERSE SWITCH : It switches over NORMAL or REVERSE of the wipe patterns.

(5) CN-249 Board :

(i) S501 : 75Ω TERMINATION SWITCH FOR REF VIDEO SIGNAL

ON : The bridge is connected.

OFF : The bridge is not connected.

When the unit is shipped, it's set to ON.

(ii) S502 :



When the unit is shipped, S502's bits 1 thru 8 are all set to ON.

(iii) S503 :



When the unit is shipped, it is set to EXT.

(iv) S4 REF VIDEO SIGNAL SELECT SWITCH :

EXT : Optional boards (BKE series) are inserted to the unit.

INT : Optional boards (BKE series) are not inserted to the unit.

When the unit is shipped, S503's bits 1 thru 8 are all set to ON.

(6) DP-77 (P1)/(P2)/(R) Boards

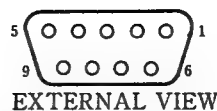
(i) S1 : RESET

When the time counter display switch is set to "CTL" and S1 is pushed, CTL is reset. At this time, display becomes 0:00:00:00.

### 1-5. INPUT/OUTPUT SIGNALS

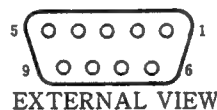
Input or output signals are as follows.

- RECORDER REMOTE (9P)



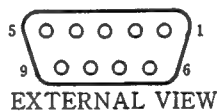
PIN NO.	Signal	Function	A, B Definition
1	FG	FRAME GND	<p>A&lt;B -&gt; "1" (MARK) A&gt;B -&gt; "0" (SPACE)</p>
2	RECEIVE A	RECEIVE A	
3	TRANSMIT B	TRANSMIT B	
4	GND	TRANSMIT COMMON	
5	—	—	
6	GND	RECEIVE COMMON	
7	RECEIVE B	RECEIVE B	
8	TRANSMIT A	TRANSMIT A	
9	FG	FRAME GND	

- PLAYER 1 REMOTE (9P)



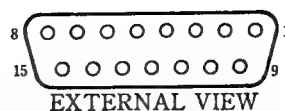
PIN NO.	Signal	Function	A, B Definition
1	FG	FRAME GND	<p>A&lt;B -&gt; "1" (MARK) A&gt;B -&gt; "0" (SPACE)</p>
2	RECEIVE A'	RECEIVE A'	
3	TRANSMIT B'	TRANSMIT B'	
4	GND	TRANSMIT COMMON	
5	—	—	
6	GND	RECEIVE COMMON	
7	RECEIVE B'	RECEIVE B'	
8	TRANSMIT A'	TRANSMIT A'	
9	FG	FRAME GND	

- PLAYER 2 REMOTE (9P)



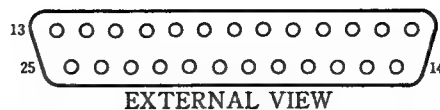
PIN NO.	Signal	Function	A, B Definition
1	FG	FRAME GND	<p>A&lt;B -&gt; "1" (MARK) A&gt;B -&gt; "0" (SPACE)</p>
2	RECEIVE A''	RECEIVE A''	
3	TRANSMIT B''	TRANSMIT B''	
4	GND	TRANSMIT COMON	
5	—	—	
6	GND	RECEIVE COMMON	
7	RECEIVE B''	RECEIVE B''	
8	TRANSMIT A''	TRANSMIT A''	
9	FG	FRANSMIT GND	

• MIXER REMOTE (15P)



PIN NO.	Signal	Function
1	VCA 1	VCA CONTROL OUTPUT 0V : (0 dB) 5V : (−100 dB) −20 dB/V
2	VCA 2	
3	VCA 3	
4	VCA 4	
5	VCA 5	
6	VCA 6	
7	VCA 7	
8	VCA 8	
9	COM 1	COMMON 1 (GND)
10	EXT MON 1	EXTERNAL MONITOR CONTROL OUT (TTL Level OPEN CORRECTOR OUTPUT) L: EXT MONITOR is output to MONITOR OUT. H: LINE OUT is output to MONITOR OUT.
11	EXT MON 2	
12	VCA LED	“LED” (EDITOR) of MXP-29 lights when the LED CONTROL OUT (TTL level open corrector output) is “L”.
13	MUTE	(NOT IN USE)
14	—	—
15	COM 2	COMMON 2 (GND)

• RS232C REMOTE (25P)



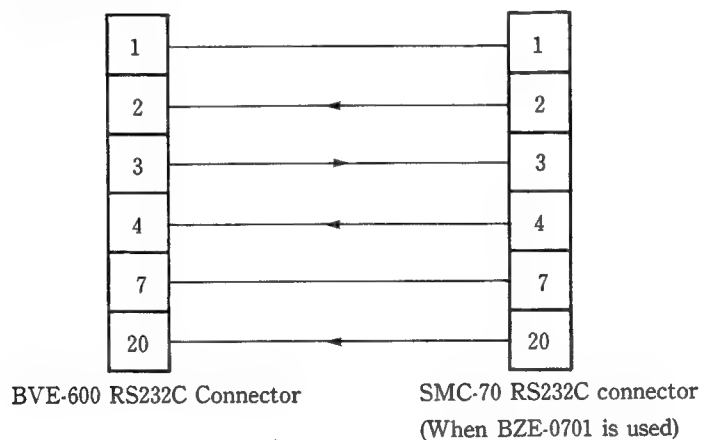
PIN NO.	Signal	Function
1	GND	—
2	TX DATA	Serial transmitting data from terminal
3	RX DATA	Transmitting data from BVE-600 to terminal
4	RTS	BVE-600 judges that it is BUSY statement by BUSY signal (–) level from terminal, and stops transmitting the data.
5	CTS	Fixed at +12 V
7	GND	—
20	DTR	It shows whether terminal is ON LINE state or not. If this signal is on the (–) side, BVE-600 judges that terminal is ON LINE state and don't transmit the data.

\* 1

\* 1 There are some cases where pin No. is different according to the connective terminal. So refer to the manual for terminal.

When baud rate and Data format of serial data are set, refer to the Operation Manual.

Connection example



## 1-6. CONNECTORS

When external cables are connected to the connectors on the connector panel during maintenance, the hardware listed below (or equivalents) should be used.

Panel Indication	Connectors
RECORDER REMOTE (9P)	1-560-651-00 PLUG, D-SUB, 9P
PLAYER 1 REMOTE (9P)	1-560-651-00 PLUG, D-SUB, 9P
PLAYER 2 REMOTE (9P)	1-560-651-00 PLUG, D-SUB, 9P
MIXER REMOTE (15P)	1-564-592-11 PLUG, D-SUB, 15P
RS-232C REMOTE	1-564-747-11 PLUG, D-SUB, 25P
REF. IN	1-560-069-11 PLUG, BNC, MALE
T <sub>1</sub> , T <sub>2</sub> (EDIT PLUS OUT)	1-560-069-11 PLUG, BNC, MALE

## 1-7. SUPPLIED ACCESSORIES

BVE-600's supplied accessories are as follows.

- Power Cord
- Connecting Cord (15P)
- Plug Holder B

## 1-8. OPTIONAL ACCESSORIES

The followings are the optional accessories.

They are recommended to use, according to the system.

(FOR UC)

- BKE-611 (NTSC COMPOSITE SWITCHER BOARD)
- BKE-621 (NTSC COMPONENT SWITCHER BOARD)

(FOR EK)

- BKE-612 (PAL COMPOSITE SWITCHER BOARD)
- BKE-622 (PAL COMPONENT SWITCHER BOARD)

## SECTION 2 SERVICE INFORMATION

### 2-1. REMOVAL/OPENING OF CABINET

#### Side Cover (L)/Side Cover (R)

- Loosen the \* marked screws shown in the figure.  
Then remove the side covers (L)/(R).

#### Top Cover

- Remove the \*\* marked screws shown in the figure.  
Then remove the top cover.

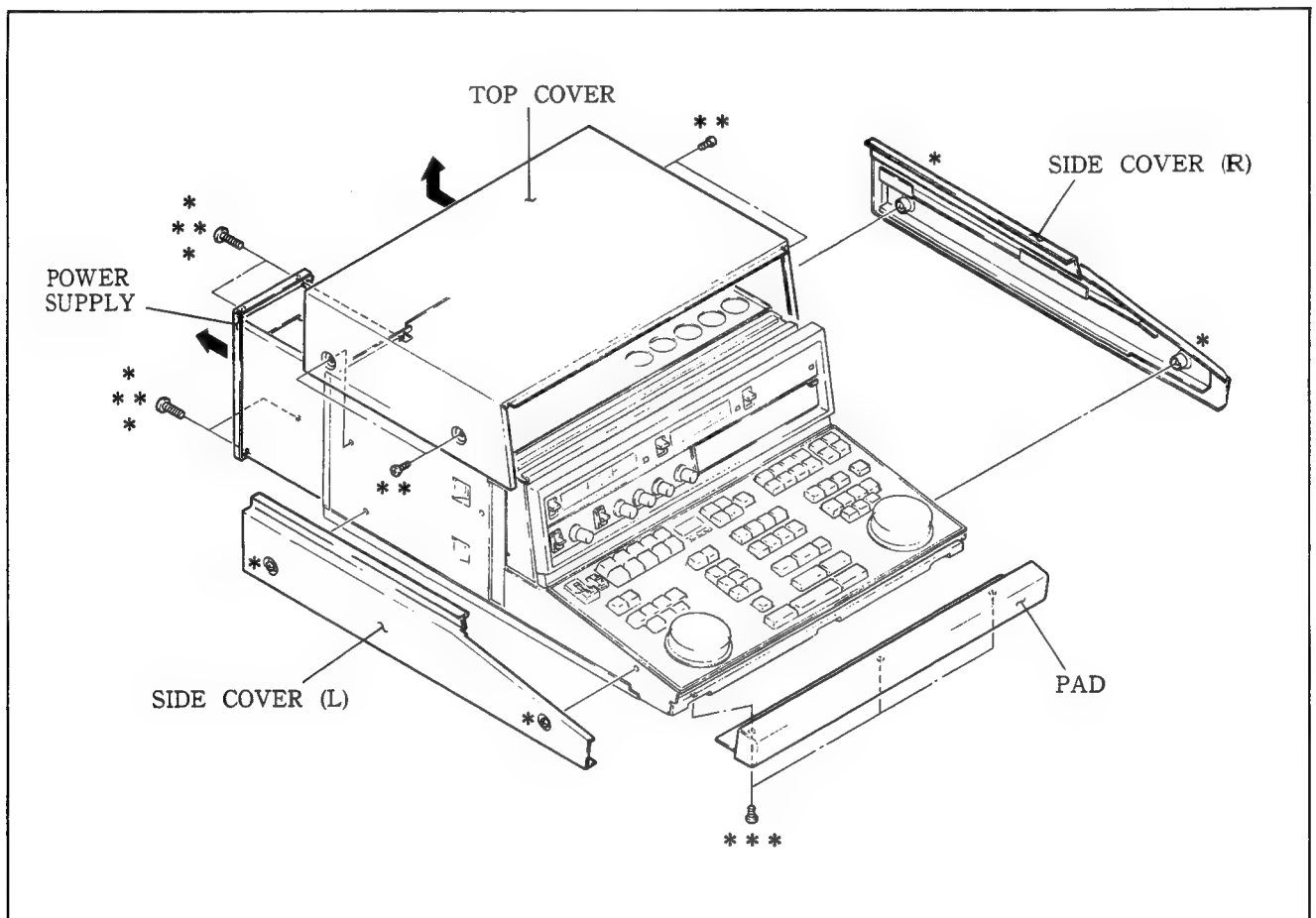
#### Pad

- Remove the \*\*\* marked screws shown in the figure.  
Then remove the pad.

#### Power Supply Block

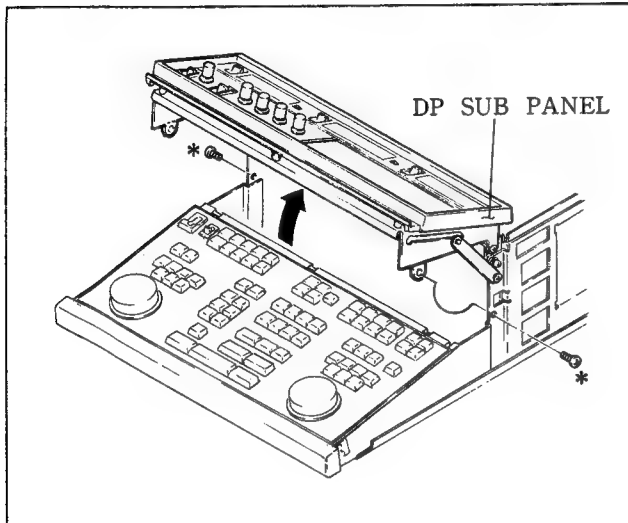
- Remove the \*\* marked screws shown in the figure.

Power supply block is pulled out.



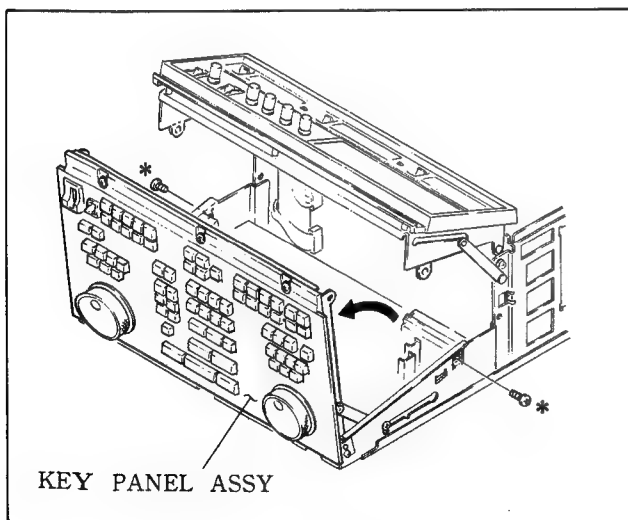
#### DP Sub Panel

- Remove the top cover.
  - Remove the side covers (L) and (R).
  - Remove the \* marked screws shown in the figure.
- Then open the DP SUB panel.



#### Key Panel Ass'y

- Remove the top cover.
  - Remove the side covers (L) and (R).
  - Remove the \* marked screws.
- Then open the key panel ass'y.



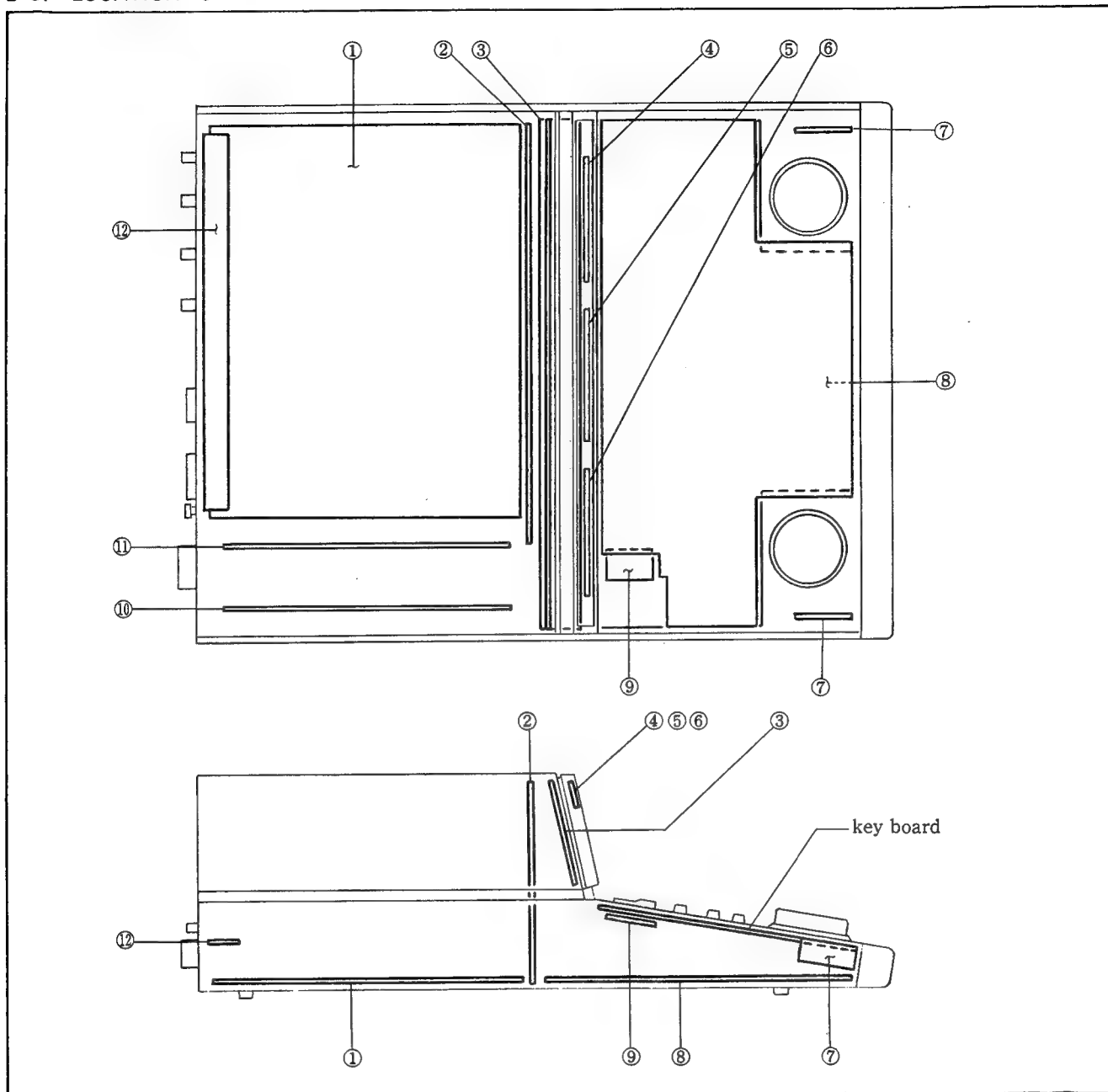
## 2-2. FUNCTION OF EACH CIRCUIT

BVE-600 consists of the following boards.

Board	Function
IF-167	VTR/Mixer Interface
SY-113	System Control
SW-231	VR/Switch Select
DET-3	Search Dial Detector
SW-232	Switch Board
CN-249	Connector Board
DP-77 (P1)	Time Counter Display
DP-77 (P2)	
DP-77 (R)	
MB-163	Mother Board
741-A	Switching Regulator
741-B	



## 2-3. LOCATION OF THE PRINTED CIRCUIT BOARD



① IF-167

② MB-163

③ SW-231

④ DP-77 (R)

⑤ DP-77 (P2)

⑥ DP-77 (P1)

⑦ DET-3

⑧ SY-113

⑨ SW-232

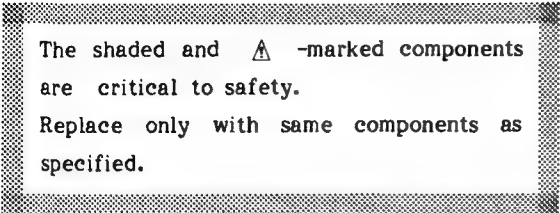

⑫ CN-249

<Switching Regulator>

⑩ 741-B

⑪ 741-A

## 2-4. PARTS INFORMATION

- (1)   
The shaded and -marked components are critical to safety.  
Replace only with same components as specified.
- (2) Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".  
This manual's exploded views and electrical spare parts list indicate the part numbers of "the standardized genuine parts at the present". Regarding engineering part changes in out engineering department, refer to Sony service bulletins and service manual supplements.
- (3) The parts marked with "s" in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

## SECTION 3

### TECHNICAL INFORMATION

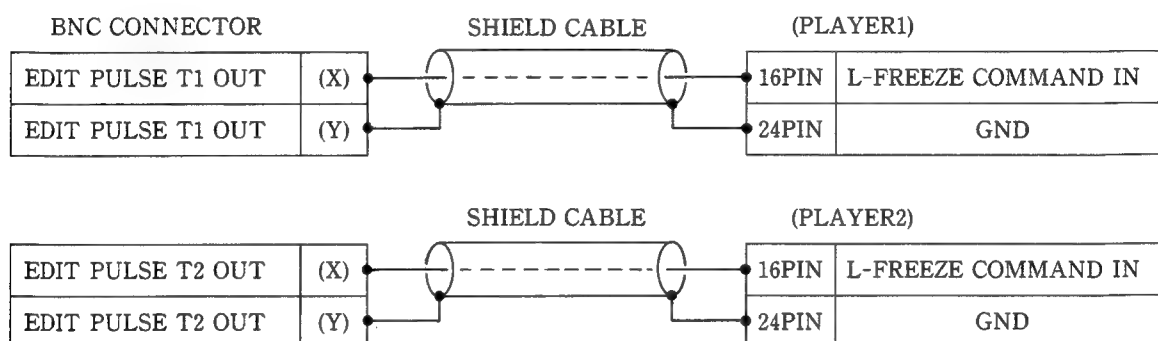
#### 3-1. HOW TO CONTROL THE AUTO FREEZE OF BVU-900 BY USING EDIT PULSE OUT OF BVE-600.

BVE-600 is able to control the freeze function of BVU-900 (with BKU-902/904) by connecting the EDIT PULSE output (T1 or T2) and L-FREEZE COMMAND IN TERMINAL of GPI connector (24pin).

##### • CONNECTION

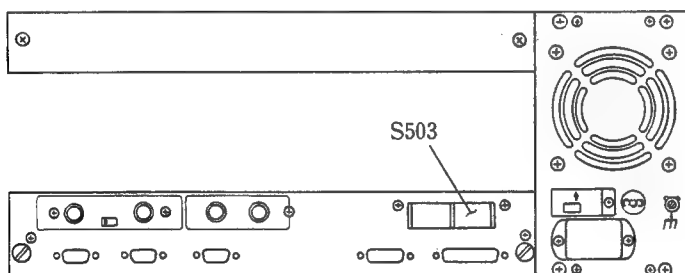
Connect the EDIT PULSE OUT and GPI connector (1-508-725-11) of BVU-900 as shown in the figure.

EDIT PULSE T1 OUT is for the PLAYER 1, and EDIT PULSE T2 OUT is for PLAYER 2.



##### • SETUP FOR BVE-600

Turn off the bit 3 (EDIT PULSE MODE) of the DIP SWITCH S503 on the rear control panel of BVE-600.



##### • OPERATION

When PREVIEW or EDIT is performed, BVE-600 inputs EDIT PULSE for FREEZE CONTROL at the PLAYER1's (or PLAYER2's) IN point.

Therefore, before performing PREVIEW or EDIT, turn on the FREEZE button of the BVR55. Turn on the SW2 of DIAL MENU (ITEM220) on BVU-900.

### 3-2. I/O CODE

#### 1. SY-113 Board

##### ROM/RAM Block

##### (1) ROM Block

Standard 27C301G×4 (512K BYTE)

Address	IC Location	
	Upper (D15-D8)	Lower (D7-D0)
00000~3FFFF	IC 99	IC 90
40000~7FFFF	IC 100	IC 91

Standard setting (512K BYTE)

##### (2) RAM Block

Standard  $\mu$ PD43256×2 (64K BYTE)

Address	IC Location	
	Upper (D15-D8)	Lower (D7-D0)
88000~97FFF	IC 98	IC 89

##### (3) EEPROM

Standard 2804A×1

Address	IC Location	
	Upper (D15-D8)	Lower (D7-D0)
86000~863FF		IC 16

Standard setting (512 BYTE)

- Information of the system set-up is kept.
- Re-write is assured until 10000 times.
- Lower address is only used.

##### (4) SIO Block

	Address	R/W	Function	Connect
SIO	80401	R/W	SIO CHA data	RS232C Port
	80405	R/W	SIO CHA control	
	80463		SIO CHB data	
	80407		SIO CHB control	
	80409 ~807FF		Not use image address	

## (5) CTC Block

	Address	R/W	Function	CLK/TRG input
Schematic Diagram No. CTC1	80001	R/W	CTC1 CH0 control	EDITOR KEY
	80003	R/W	CTC1 CH1 control	SW'er KEY
	80005	R/W	CHC1 CH2 control	10KEY KEY
	80007	R/W	CTC1 CH3 control	2400Hz
IC27	80009 ~803FF		Not use image address	
Schematic Diagram No. CTC2	81C01	R/W	CTC2 CH0 cntrol	SEARCH DIAL PULSE (REW) RECORDER
	81C03	R/W	CTC2 CH1 control	SEARCH DIAL PULSE (FWD) RECORDER
	81C05	R/W	CT2 CH2 control	VD
	81C07	R/W	CTC2 CH3 control	VD
IC28	81C09 ~81FFF		Not use image address	
Schematic Diagram No. CTC3	80801	R/W	CTC3 CH0 control	SEARCH DIAL PULSE (REW) PLAYER
	80803	R/W	CTC3 CH1 control	SEARCH DIAL PULSE (FWD) PLAYER
	80805	R/W	CTC3 CH2 control	VD
	80807	R/W	CTC3 CH3 control	VD
IC29	80809 ~80BFF		Not use image address	
Schematic Diagram No. CTC4	80C01	R/W	CTC4 CH0 control	2400Hz CLOCK
	80C03	R/W	CTC4 CH1 control	FRAME
	80C05	R/W	CTC4 CH2 control	FRAME
	80C07	R/W	CTC4 CH3 control	FRAME
IC30	80C09 ~80FFF		Not use image address	

## (6) RET I

	Address	R/W	Function
RET I	81001	W	RETURN I

- It recovers from the interruption cycle by writing the data "ED" and "4D" into the address of 81001.

# (7) SYSTEM REFERENCE

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
81801	R		DIAL DIR (RECORDER)	DIAL DIR (PLAYER)	NESY	CF2	CF1	FRAME	

- Description for each bit.

FRAME : This is the frame pulse phase detected by reference video.

0 : 1st field

L : 2nd field

Even if the reference video/sync is not input, the frame pulse is generated by SY-113 circuit.

CF1, CF2 : This is the phase of pseud color frame pulse that the frame pulse is divided.

	CF2	CF1
1st Frame	0	0
2nd Frame	0	1
3rd Frame	L	0
4th Frame	L	1

NESY : When the reference video/sync is not input, it becomes "1".

DIAL DIR : It shows the rotating direction of search dial.

0 : REW/STOP direction

1 : FWD direction

# (8) BAUD RATE SELECTOR

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
81401	W						SEL C	SEL B	SEL A

- SEL A~SEL C : RC232C Port Baud Rate is switched over.

SEL C	SEL B	SEL A	BAUD
0	0	0	150
0	0	1	300
0	1	0	600
0	1	1	1200
1	0	0	2400
1	0	1	4800
1	1	0	9600
1	1	1	19200

(9) EDIT PULSE

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
81801	W						EDIT PULSE 1	EDIT PULSE 2	

- Each bit of GPI 1 thru. 3 are :
  - “1” RELAY close TTL OUT “L”
  - “0” RELAY open TTL OUT “H”

(10) CLUTCH AND BUZZER CONTROL

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
9F001	W						BUZZER	CLUTCH (PLAYER)	CLUTCH (RECORDER)

## 2. IF-167 Board (9PIN VTR CONTROL I/O)

ADDRESS	IC LOCATION		NOTE
	VTR 1	VTR 2	
0000~3FFF	IC32	IC36	ROM
4000~47FF	IC33	IC35	RAM
0000~87FF	IC68	IC71	RAM*1

\* 1. RAM (IC68, 71) communicates with the CPU on SY-113 board. It is able to access from Memory address of IC68 and 71 are as follows. the CPU on the SY-113.

	VTR 1(REC,PLY-1 )	VTR 2(PLY-2, )
Address	F0001~F0FFF	F1001~F1FFF

(Only the odd-numbered address are used.)

### I/O

ADDRESS	R/W	Function	
00	R/W	CTC CH0 CONTROL	
01	R/W	CTC CH1 CONTROL	
02	R/W	CTC CH2 CONTROL	
03	R/W	CTC CH3 CONTROL	
08	R/W	SIO CHA DATA	
09	R/W	SIO CHB DATA	
0A	R/W	SIO CHA CONTROL	
0B	R/W	SIO CHB CONTROL	
10	W	Resister for interrupt level matching	* 2
18	W	Resister for interrupt vector generation (INTERRUPT VECTOR)	
20	R	SWITCH REGISTER	* 3

\* 2. Interrupt requests from IF-167 to SY-113 are as follows.

	VTR 1(REC,PLY-1 )	VTR 2(PLY-2, )
INTERRUPT LEVEL	Level 6	Level 5

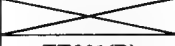
D7	D6	D5	D4	D3	D2	D1	D0	
S1-1	S1-2	S1-3	S1-4	FRAME	0 # C	0 # B	0 # A	VTR-1
S1-1	S1-2	S1-3	S1-4	FRAME	0 # C	0 # B	1 # A	VTR-2

\* 3. FRAME : FRAME Signal.

S1-1~S1-4 Switch Register S1 ON "0" , OFF"1"



### 3. IF-167 Board(AUDIO MIXER CONTROL I/O)(MXP-29)

	AUDIO	NOTE
ROM		MAIN ROM
SWITCH REGISTER	FE801(R)	* 1
MIX RATIO CONT	FE800(W)	* 2
X-POINT SELECT	FE881(W)	* 3
MODE CONT	FE900(W)	* 4

\*1

D7	D6	D5	D4	D3	D2	D1	D0
1	2	3	4	5	6	7	8



- The settings of 8 Bit DIP Switch are read.  
ON = "0"  
OFF = "1"

\*2

D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
Y <sub>7</sub>	Y <sub>6</sub>	Y <sub>5</sub>	Y <sub>4</sub>	Y <sub>3</sub>	Y <sub>2</sub>	Y <sub>1</sub>	Y <sub>0</sub>	X <sub>7</sub>	X <sub>6</sub>	X <sub>5</sub>	X <sub>4</sub>	X <sub>3</sub>	X <sub>2</sub>	X <sub>1</sub>	X <sub>0</sub>

- VCA voltage of the audio mixer is controlled.
- Mix Ratio of the source indicated by X and Y is decided. Both X and Y are designated by 8-bit, and they are output with synchronizing with the field.
- In both X and Y, all 0 : 0 dB all 1(FF) : -100 dB (-20 dB/V)




\*3

D7	D6	D5	D4	D3	D2	D1	D0
		Y	Y	Y	X	X	X

- It outputs the code of source (VTR) designated by X and Y.  
(X : From VTR, Y : To VTR)

X(Y)	0	1	2	3	4	5	6	7
Source	—	P1	P2	AUX	—	—	—	—

\*4

D15	D14	D13	D12	D11	D10	D9	D8
			VCA all OFF	MUTE (Not in use)	VCA LED	EXT MON 2	EXT MON 1


(1) EXT MON 1, EXT MON 2

- EXT MON 1 = 0 ; Line Out (L CH) is output to Monitor Out terminal (L CH).  
1 ; EXT MONITOR (L CH) is output to Monitor Out terminal (L CH).  
EXT MON 2 = 0 ; Line Out (R CH) is output to Monitor Out terminal (R CH).  
1 ; EXT MONITOR (R CH) is output to Monitor Out terminal (R CH).  
(It is designated to "0" during POWER ON/RESET.)

(2) VCA LED(TALLY)

- It turns ON/OFF of LED which shows whether MXP-29 is REMOTE state or not.  
VCA LED = 0 ; LED on the MXP-29 panel → turning out the lights  
1 ; LED on the MXP-29 panel → turning on the lights  
(It is designated to "1" during POWER ON/RESET.)

4. SG-123 Board (SWITCHER CONTROL I/O)(BKE-6××)

	SWITCHER	NOTE
ROM		MAIN ROM
SYSTEM REF.	FEC01(R)	* 1
SWITCH	FEC01(W)	* 2
MONITOR	FEC81(W)	* 3
AUTO TRANSITION	FED01(W)	* 4
WIPE SIGNAL(1)	FED81(W)	* 5
WIPE SIGNAL(2)	FEE01(W)	
EFFECT SELECT	FEE81(W)	* 6
MONITOR SUP. DATA	FEF01(W)	* 7
MONITOR SUP. CONT.	FEF81(W)	

\* 1. SYSTEM REF

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEC01	R	SWITCHER CONNECT			VD	COMPOSITE COMPONENT	AUX-VIDEO	VTR P2-VIDEO	VTR P1-VIDEO

D7 : NEGATIVE LOGIC.


\* 2. SWITCH(VIDEO CROSS POINT COMMAND)

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEC01	W	B-BUS BG	B-BUS AUX	B-BUS P2	B-BUS P1	A-BUS BG	A-BUS AUX	A-BUS P2	A-BUS P1

DATA SET : POSITIVE LOGIC.

VD signal sets the switch port data, (Refresh)

\* 3. MONITOR(VIDEO CROSS POINT COMMAND)

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEC81	W		MONITOR MONI CONT (VTR)	MONITOR EFF	MONITOR B-BUS	MONITOR A-BUS	MONITOR REC.	MONITOR P2	MONITOR P1

DATA SET : POSITIVE LOGIC.

VD signal sets the MONITOR PORT DATA.(Refresh)

\* 4. AUTO TRANSITION

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FED01	W								

- When data 00 through FF are entered at this port, a transition signal waveform is produced. The data entered at this port is input to a D/A converter, converted into a DC level, and output. Data is hardware refreshed at the VD signal edge whenever it is set. The resolution is 0 through 255.
- This port is control-processed according to the transition time (number of frames) which has been set. The waveform pattern map is set, then it is input to the port.

\*5. WIPE SIGNAL(1)











Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FED81	W	WIPE D8	WIPE D7	WIPE D6	WIPE D5	WIPE D4	WIPE D3	WIPE D2	WIPE D1

WIPE SIGNAL(2)

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEE01	W						WIPE D11	WIPE D10	WIPE D9

- The wipe signal's data set becomes a pair in ports FED81 and FEE01.

- The following data is entered at each port using wipe pattern key data (ten types) :

WIPE PATARN	WIPE KEY DATA	PORT FEE01(W)			PORT FED81(W)							
		WIPE D11	WIPE D10	WIPE D9	WIPE D8	WIPE D7	WIPE D6	WIPE D5	WIPE D4	WIPE D3	WIPE D2	WIPE D1
	2 9						1		1			1
	0 0											
	8 3				1						1	1
	0 0											
	8 8			1	1				1			
	0 1											
	8 8		1	1	1				1			
	0 3											
	4 4			1		1				1		
	0 1											
	2 5						1			1		1
	0 0											
	4 3					1					1	1
	0 0											
	8 8	1		1	1				1			
	0 5											
	8 8	1	1	1	1				1			
	0 7											
	7 5					1	1	1		1		1
	0 0											

\*6. EFFECT SELECT COMMAND

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEE81	W				FADER MANUAL	EFFECT CUT	TITLE	EFFECT MIX	EFFECT WIPE

- The above data bits are set using effect key data.

\*7. MONITOR SUPER DATA COMMAND(1)

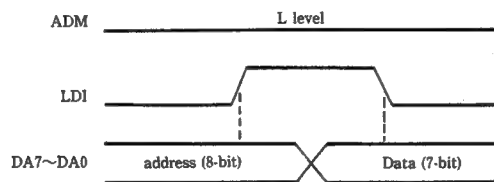
Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEF01	W	DA7	DA6	DA5	DA4	DA3	DA2	DA1	DA0

MONITOR SUPER CONTROL COMMAND(2)

Address	R/W	DATA BUS							
		D7	D6	D5	D4	D3	D2	D1	D0
FEF81	W							LDI	ADM

• Data write

ADM is set to low. When the signal which is input to the LDI terminal is changed from low to high, eight-bit data (DA7 through DA0) is latched in the memory address register. When the signal at the LDI terminal is changed from high to low, seven-bit data (DA6 through DA0) is written into the address memory designated by the memory address register. This timing chart is shown in the figure below.



Timing Chart in Direct Address Mode

• Character code

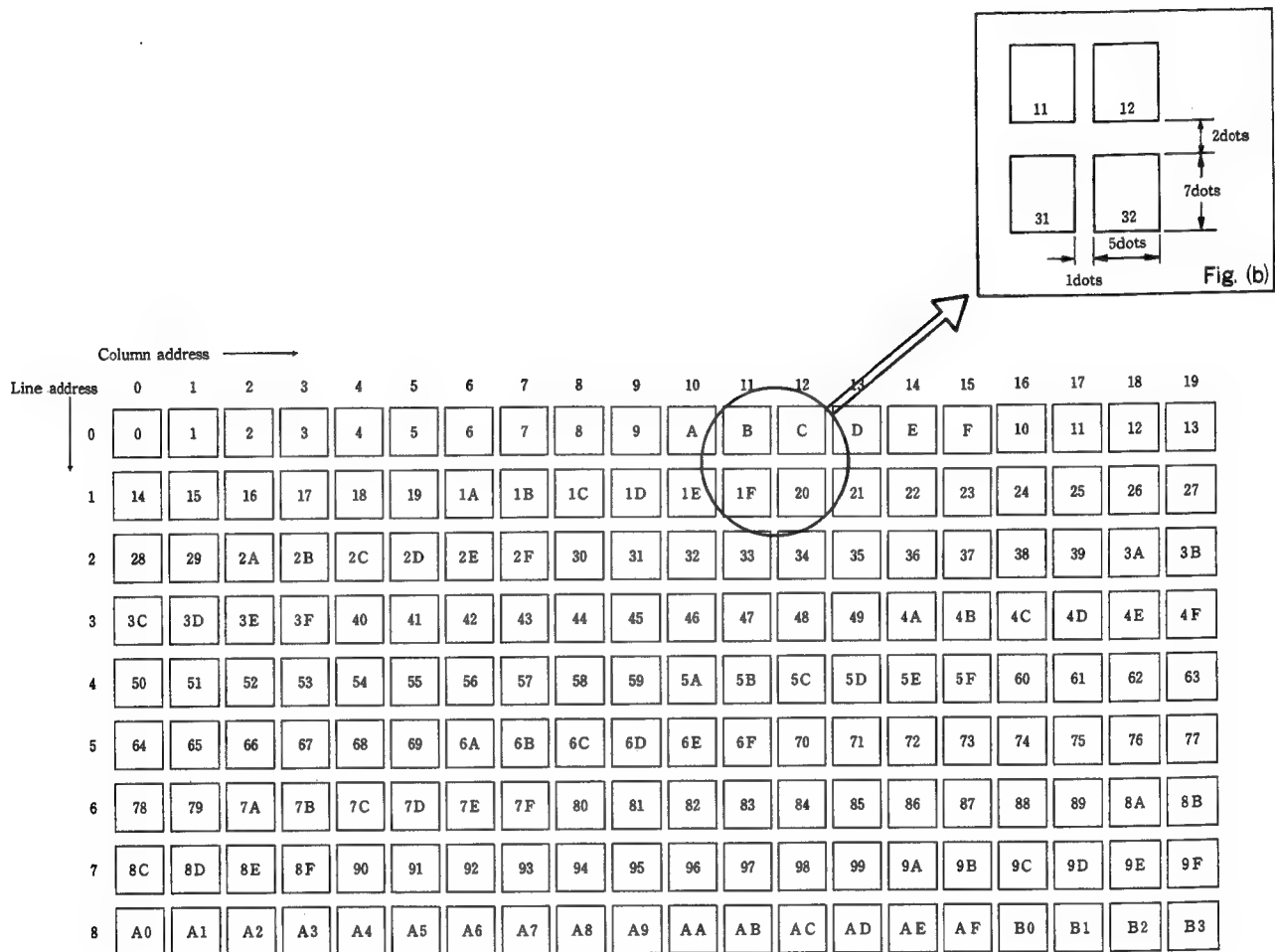
MB88303 has an internal 5×7 dot ROM character generator. Each character corresponds to the codes described in the character code list.

$\begin{smallmatrix} b_4-b_0 \\ b_3-b_0 \end{smallmatrix}$	0	1	2	3
0	A	N	0	↑
1	B	O	1	↓
2	C	P	2	←
3	D	Q	3	→
4	E	R	4	+
5	F	S	5	-
6	G	T	6	*
7	H	U	7	/
8	I	V	8	=
9	J	W	9	&
A	K	X	?	year
B	L	Y	/	Month
C	M	Z	' (Apostrophe)	Day
D	• (Dot)	:	(Period)	,
E	┘	■	□ (Background)	~
F	□ (Blank)	(	)	Ⓜ

Character Code List

- MB88303 has a 20-character × 9-line (180 characters) display (see Fig. (a)).

The character is configured by a 5×7 dot matrix. There is a one-dot space between the characters, and there is a two-dot space between the lines. The configuration is shown in Fig. (b).



\* The numbers (0 through B3) in the frame indicate the display memory address.

Fig. (a) Screen-to-Display Relation

## 5. BVE-600 7SEG DISPLAY (P-1,P-2,RECORDER)

### (1) Player-1 seven segment LED operation

Address	R/W	Function	NOTE
9C001	W	data *1	IC5
9C201	W	control *2	

### (2) Player-2 seven-segment LED operation

Address	R/W	Function	NOTE
9C401	W	data *1	IC26
9C601	W	control *2	

### (3) Recorder seven-segment LED operation

Address	R/W	Function	NOTE
9C801	W	data *1	IC40
9CA01	W	control *2	

\*1 Used for data read and write (8-bit).

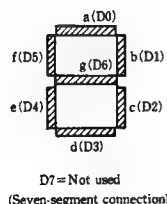
\*2 Used for command write and read (8-bit).

### • Display RAM write (address in 8279)

control (w)	D7	D6	D5	D4	D3	D2	D1	D0	Address in 8279	From the left (display digit address)
	1	0	0	0	0	0	0	0	8 0 H	1st digit
						0	0	1	8 1 H	2st digit
						0	1	0	8 2 H	3st digit
						0	1	1	8 3 H	4st digit
						1	0	0	8 4 H	5st digit
						1	0	1	8 5 H	6st digit
						1	1	0	8 6 H	7st digit
						1	1	1	8 7 H	8st digit

### • Display RAM write (data)

data (w)	D7	D6	D5	D4	D3	D2	D1	D0	Seven-segment display	
	0	0	1	1	1	1	1	1	3 FH	0
	0	0	0	0	0	1	1	0	0 6 H	1
	0	1	0	1	1	0	1	1	5 BH	2
	0	1	0	0	1	1	1	1	4 FH	3
	0	1	1	0	0	1	1	0	6 6 H	4
	0	1	1	0	1	1	0	1	6 DH	5
	0	1	1	1	1	1	0	1	7 DH	6
	0	0	0	0	0	1	1	1	0 7 H	7
	0	1	1	1	1	1	1	1	7 FH	8
	0	1	1	0	1	1	1	1	6 FH	9
	0	1	1	1	0	1	1	1	7 7 H	A
	0	1	1	1	1	1	0	0	7 CH	b
	0	1	0	1	1	0	0	0	5 8 H	c
	0	1	0	1	1	1	1	0	5 EH	d
	0	1	1	1	1	0	0	1	7 9 H	E
	0	1	1	1	0	0	0	1	7 1 H	F
	0	1	0	0	0	0	0	0	4 0 H	—



# (5) KEY CODE

- Editor key in block

## KEY BOARD ENCODER

Address	R/W	Function	NOTE
9D001	R/W	data *1	IC71
9D201	R/W	control *2	

\*1 Used for data read and write (8-bit).

\*2 Used for command write and read (8-bit).

It is used for data loading and LED display using the editor's key.

## •KEY BOARD CODE

KEY DATA	KEY NAME
C1	P1(PPLAYER)
C2	P2(PPLAYER)
C4	R(RECORDER)
C5	P1(RECORDIR)
C6	P2(RECORDIR)
C7	REC(RECORDIR)
C8	—
C9	+
CA	IN
CB	OUT
CC	EFF
CD	SPLIT
CE	TOTAL
CF	DVR
D0	V
D1	A1
D2	A2
D3	ASMBL
D4	CLEAR
D5	LAST-X
D6	TIME TRACK
D7	SPEED
D8	MARK IN
D9	MARK OUT
DB	MARK SPLIT
DC	REC/REC OFF
DD	PREVIEW
DE	ALL STOP
DF	GO TO
E0	PLAY(PPLAYER)
E1	STILL(PPLAYER)

KEY DATA	KEY NAME
E2	REW(PPLAYER)
E3	FF(PPLAYER)
E4	SHTL(PPLAYER)
E5	JOG(PPLAYER)
E6	DMC(PPLAYER)
E8	PLAY(RECORDER)
E9	STILL(RECORDER)
EA	REW(RECORDER)
EB	FF(RECORDER)
EC	SHTL(RECORDER)
ED	JOG(RECORDER)
EE	DMC(RECORDER)
F5	CF REF VTR
FC	CF P1
FD	CF P2
FE	CF R

(WITH PUSHING **SHIFT** KEY)

KEY DATA	KEY NAME
87	R-REC
8E	START
8F	SPEED
93	1st EDIT
95	LAST-ED
9B	MK START
9D	REPLAY
A0	STB OFF(PPLAYER)
A1	EJECT(PPLAYER)
A4	STOP(PPLAYER)
A8	STB OFF(REORDER)
A9	EJECT(RECORDER)
AC	STOP(RECORDER)

Set the CTL/TC/U-BIT switch to U-BIT and turn on the power. The key code above is displayed on the 7-segment LED (for TRANSMITION TIME).

(6) SWITCHER KEY CODE

- Switcher key in block

KEY BOARD ENCODER

Address	R/W	Function	NOTE
9CC01	R/W	data *1	IC47
9CE01	R/W	control *2	

- \* 1 Used for data read and write (8-bit).
- \* 2 Used for command write and read (8-bit).

It is used for data loading ; LED display ; and two-digit, seven-segment LED display (transition time) using switcher's key.

●SWITCHER KEY data to NAME

KEY DATE	KEY NAME
C0	
C1	
C2	
C3	
C4	
C5	P1 RESET
C8	
C9	
CA	
CB	
CC	
CD	P2 RESET
D0	A BUSS P1
D1	A BUSS P2
D2	A BUSS AUX
D3	A BUSS BACK GRND

KEY DATE	KEY NAME
D4	TITLE
D5	R RESET
D8	B BUSS P1
D9	B BUSS P2
DA	B BUSS AUX
DB	B BUSS BACK GRND
DC	A-BUSS
DD	B-BUSS
E0	CUT
E1	DISS
E2	WIPE
E3	MAN
E4	EFF
E5	VTR
E8	1(sec)
F0	0.1(sec)

Set the CTL/ TC U-BIT switch to U-BIT and turn on the power. The key code above is displayed on the 7-segment LED (for TRANSITION TIME).



## SECTION 4 ELECTRICAL ALIGNMENT

### 4-1. RAMP SIGNAL ADJUSTMENT

[Equipment Required]

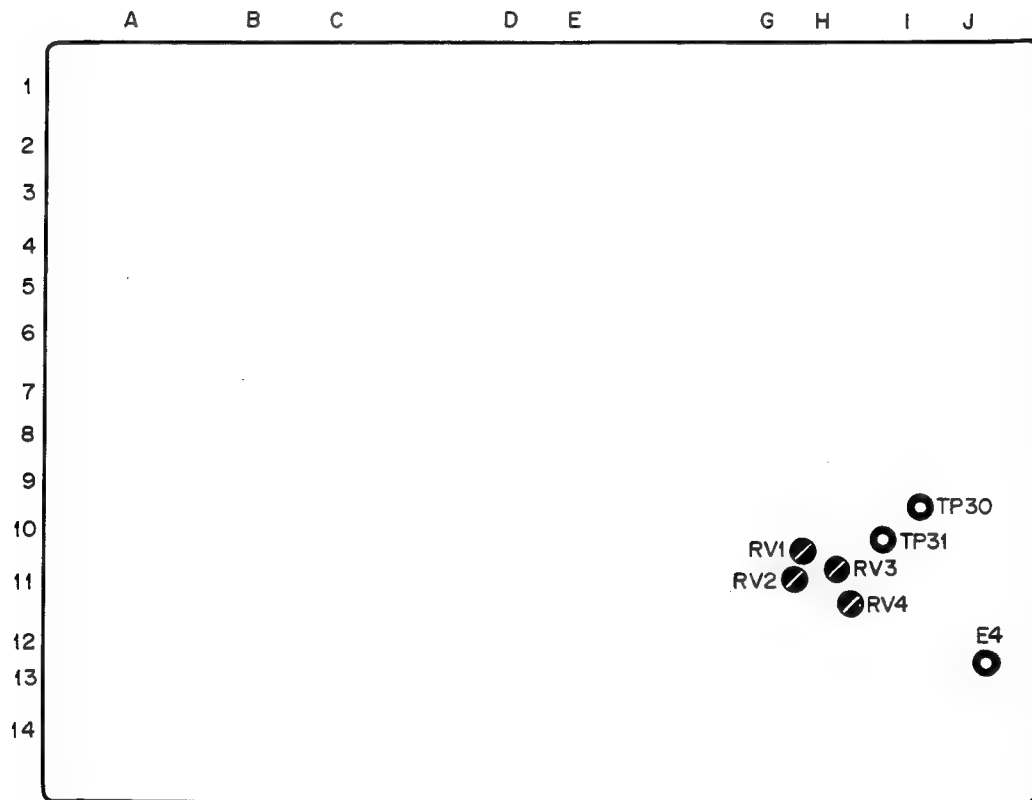
Digital voltmeter

[Setting]

- Turn off the power switch.
- Turn on only the bit 6 of the S3 on the SY-113 board.
- Turn on the power switch again. The unit enters the I/O test mode.

[ADDRESS]

Adjustment points on the IF-167 board are shown in the figure.



### Step 1.

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"><li>• I/O test mode (Refer to the [Setting].)</li><li>• Push the MARK OUT button.</li></ul>	TP31/IF-167(ADD; H-10) GND; E4/IF-167(ADD; J-12)  5.0±0.1V	● RV1/IF-167(ADD; H-10)

### Step 2.

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"><li>• I/O test mode (Refer to the [Setting].)</li><li>• Push the MARK IN button.</li></ul>	TP31/IF-167(ADD; H-10) GND; E4/IF-167(ADD; J-12)  0±0.03V	● RV2/IF-167(ADD; H-11)

After this adjustment is completed, perform the step 1 again.

### Step 3.

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"><li>• I/O test mode (Refer to the [Setting].)</li><li>• Push the PREVIEW button.</li></ul>	TP30/IF-167(ADD; J-10) GND; E4/IF-167(ADD; J-12)  5.0±0.1V	● RV3/IF-167(ADD; H-11)

### Step 4.

machine conditions for adjustment	spec.	adjustment
<ul style="list-style-type: none"><li>• I/O test mode (Refer to the [Setting].)</li><li>• Push the REC/REC OFF button.</li></ul>	TP30/IF-167(ADD; J-10) GND; E4/IF-167(ADD; J-12)  0±0.03V	● RV4/IF-167(ADD; H-11)

After this adjustment is completed, perform the step 3 again.

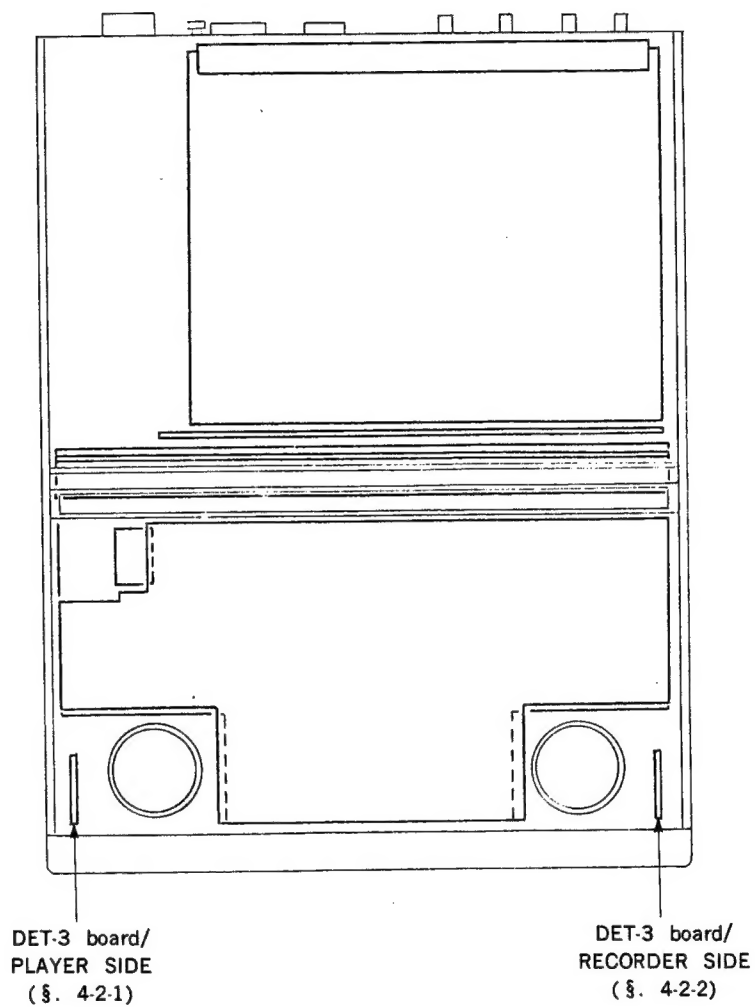
After the adjustment steps 1 thru. 4 are completed, turn off the power switch. Turn off the bit 6 of the S3 on the SY-113 board.

## 4-2. DIAL PULSE AMPLIFIER ADJUSTMENT

[Equipment Required]

Dual trace oscilloscope

TOP VIEW



#### 4-2-1. Dial Pulse Amplifier Adjustmet (Player Side)

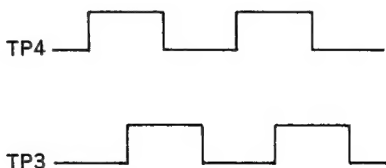
##### Step 1.

machine conditions for adjustment	spec.	adjustment
• JOG mode.	<p>TP4/SY-113(ADD; N-13) GND; E2/SY-113(ADD; M-13)</p> <p>Turning search dial, turn RV1 on the DET-3 board to right and left. Set RV1 at the center of two positions; the position on which the pulse begins to appear at TP4 on the SY-113 board when RV1 is turned to left, and the other position on which the pulse does when RV1 is turned to right.</p>	● RV1/DET-3

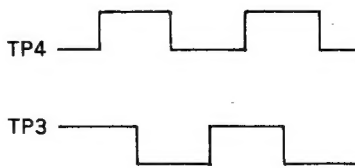
##### Step 2.

machine conditions for adjustment	spec.	adjustment
• JOG mode.	<p>TP3/SY-113(ADD; N-13) GND; E2/SY-113(ADD; M-13)</p> <p>Adjust RV2 on the DET-3 board for TP3 on the SY-113 board as Step 1.</p>	● RV2/DET-3

##### Step 3.

machine conditions for adjustment	spec.
• Turn search dial to FWD direction.	<p>FWD</p> 

##### Step 4.

machine conditions for adjustment	spec.
• Turn search dial to REV direction.	<p>REV</p> 

## 4-2-2. Dial Pulse Amplifier Adjustment (Recorder Side)

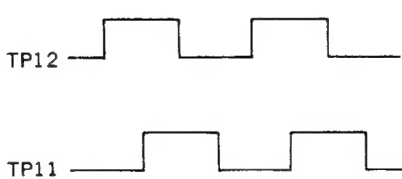
### Step 1.

machine conditions for adjustment	spec.	adjustment
• JOG mode.	<p>TP12/SY-113(ADD; A-13) GND; E4/SY-113(ADD; A-11)</p> <p>Turn the search dial, and at the same time turn RV1 on the DET-3 board to right and left. Set RV1 at the center of two positions: one is the position where the pulse begins to appear at TP12 on the SY-113 board when RV1 is turned to left, and the other is the position where the pulse begins to appear when RV1 is turned to right.</p>	● RV1/DET-3

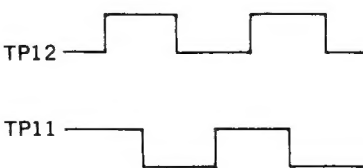
### Step 2.

machine conditions for adjustment	spec.	adjustment
• JOG mode.	<p>TP12/SY-113(ADD; A-13) GND; E4/SY-113(ADD; A-11)</p> <p>Adjust RV2 on the DET-3 board for TP11 on the SY-113 board as Step 1.</p>	● RV2/DET-3

### Step 3.

machine conditions for adjustment	spec.
• Turn search dial to FWD direction.	<p>FWD</p>  <p>TP12</p> <p>TP11</p>

### Step 4.

machine conditions for adjustment	spec.
• Turn search dial to REV direction.	<p>REV</p>  <p>TP12</p> <p>TP11</p>